Name: From the locality, *Sincos*, Peru.

Chemical properties: *Formula*, $CaO{:}V_2O_4{:}P_2O_5{:}5H_2O$ or $Ca(VO)_2\ [5H_2O]\ (PO_4)_2$. Theory, CaO 12.3, V_2O_4 36.6, P_2O_5 31.3, H_2O 19.8%. Analysis, CaO 12.1, V_2O_4 36.3, P_2O_5 31.7, H_2O 19.9, insol. 0.3, sum 100.3%.

Crystallographic and optical properties: Tetragonal, in rectangular plates; uniaxial, negative; or in part biaxial.

Physical properties: Color green.

Occurrence: In a black carbonaceous shale.

Discussion: Seems to belong in the uranite group, the (VO) taking the place of the (UO_2) in the commoner members. Full description is to be published elsewhere.

E. T. W.

ABSTRACTS—MINERALOGY

PREHNITE FROM ADAMS SOUND, ADMIRALTY INLET, BAFFIN ISLAND, FRANKLIN. R. A. A. Johnston. *Canada Geol. Surv., Victoria Memorial Museum, Bull.* 1.

An analysis of a pale green prehnite with index of refraction >1.60 and birefringence. >0.20, gave: SiO_2 44.35; Al_2O_3 19.44; Fe_2O_3 6.58; CaO 25.50; H_2O 4.00. However, a small amount of admixed quartz (4.38%) adhered to specimen. Owing to the high content of iron the term *ferroprehnite* was suggested. W. F. H.

THE LIMITS OF MIX-CRYSTAL FORMATION IN THE MINERALS OF THE EPIDOTE GROUP. W. Eitel. *Neues Jahrb. Min. Geol., Beil.-Bd.* **42**, 173–222, 1918; *ibid.*, 223–71; thru *Min. Abst.* **1**, 246, 1921.

A large number of analyses of zoisite and epidote; piedmontite and orthite were plotted in four and six dimensions, respectively, and the limits of miscibility discussed. E. F. H.

THE ORIGIN OF THE METEORITIC IRONS OF PALLAS AND CANYON DIABLO. Stanislas Meunier. *Bull. soc. géol. France*, [4] **18**, 202-213, 1918; through *Rev. Géol.*, **1** (10), 382-383, 1920.

The features of certain iron meteorites indicate that they have not been formed by fusion, but that their metal has been deposited in veins, perhaps by the action of hydrogen on volatile iron and nickel chlorides. E. T. W.

ASBESTOS IN THE UNION OF SOUTH AFRICA. A. L. Hall. *Mem. Geol. Survey Union S. Africa*, **12**, 152 pp., 1918.

In addition to the portion of this paper already abstracted in connection with the report of the supposed new mineral "amosite" (*Am. Min.* **5** (1), 16, 1920), full descriptions are given of the occurrence of the well-known crocidolite, of chrysotile and of tremolite asbestos. Analyses of "amosite" are included. E. T. W.

THE SCAPOLITES. Nils Sundius. *Bull. Geol. Inst. Univ. Upsala*, **16**, 91-106, 1918; through *Neues Jahrb. Min. Geol.*, **1919**, I, Ref. 140-142.

A continuation of previous work, abstracted in *Am. Min.*, **5** (1), 21, 1920. Carbonate marialite is written $NaHCO_3.3NaAlSi_3O_8$ and sulfate marialite as $NaHSO_4.3NaAlSi_3O_8$. Analyses of several occurrences are recalculated into their mineral compositions, considerable amounts of carbonate and sulfate-bearing molecules being present. The carbonate-scapolites are not markedly different optically from the sulfate-scapolites ($\omega=1.58-1.59$, $\epsilon 1.55-1.56$). E. T. W.

TITANIUM-BEARING CORUNDUM SPINELLITE (ROCK EMERY); A PRELIMINARY STATEMENT OF ITS OCCURRENCE AND COMPOSITION IN VIRGINIA. T. L. WATSON AND G. STEIGER. *J. Wash. Acad. Sci.*, **8**, 665-676, 1918.

A microscopic study of 50 thin sections shows it to consist of spinel (pleonaste-50% or more), magnetite, and corundum, with some ilmenite and minor amounts of sillimanite, andalusite, chlorite, and probably corundophyllite. The spinel corresponds to the formula $(Fe,Mg)O.(Al,Fe)_2O_3$, in which the FeO is molecularly greater than MgO, and Fe_2O_3 is about ⅛ of the Al_2O_3. The name spinellite, applied to the titaniferous-iron-spinel ores in northern Sweden, is considered also applicable to this rock mass. W. F. H.

THE ANTIMONIAL SILVER-LEAD VEINS OF THE ARABIA DISTRICT, NEVADA. ADOLPH KNOPF. *U. S. Geol. Survey, Bull.* **660**, 249-255, 1918.

The chief ore of this district is a silver-bearing bindheimite (hydrous antimonate of lead) which is found in veins cutting granodiorite and hornfels. The bindheimite occurs in two forms, either as a yellow-brown amorphous mineral gel with brilliant pitchy luster and rhythmic precipitation bands, or as a compact, earthy variety with a divergent columnar structure, pseudomorphous after some sulphide from which the bindheimite was derived. An analysis shows 0.33% silver.

W. F. H.

THE DEPOSITS OF MAGNESIUM CARBONATE IN SPAIN. E. DUPUYDE-LOME AND C. F. MAQUIEIRA-DE-BORBON. *Bol. Inst. geol. España*, **39**, 255-295, 1918; through *Rev. géol.*, **1** (5), 200, 1920.

Deposits of the mineral giobertite are described. E. T. W.

AMBLYGONITE FROM UTÖ. HELGE BACKLUND. *Geol. Fören. Förh.*, **40**, 757-775, 1918.

Analysis and optical properties are given: $\alpha=1.591$, $\beta=1.605$, $\gamma=1.613$.

W. F. FOSHAG.

THE OPTICAL PROPERTIES OF THE OLIVINE GROUP. NILS H. MAGNUSSON. *Geol. Fören. Förh.*, **40**, 601-627, 1918.

Picrotephroite from Långban containing 18% MgO, gave $\alpha=1.711$, $\gamma=1.740$; tephroite, Pajsberg, $\alpha=1.759$, $\beta=1.786$, $\gamma=1.797$; iron-knebelite, Wester Silvberg, $\alpha=1.805$, $\beta=1.838$, $\gamma=1.847$; manganfayalite, Gillinge, $\alpha=1.823$, $\beta=1.864$, $\gamma=1.879$. M. concludes that in the forsterite-tephroite and tephroite-fayalite series the refractive indices do not fall on straight line curves when plotted against composition.

EDW. F. HOLDEN.

THE GENESIS OF THE ORES AT TONOPAH, NEVADA. E. S. BASTIN AND F. B. LANEY. *Prof. Paper, U. S. G. S.*, **104**, 50 pp., 1918.

In the early stages of mineralization the ore minerals were deposited through replacement of the wall rock. Later, when less of the wall rock remained near the vein fractures and when the character of the solutions had changed, certain of the ore minerals, notably galena, were themselves replaced by other ore minerals. The hypogene or primary ores have been modified by oxidation and enrichment through agencies originating near the surface. W. F. H.

TIN DEPOSITS NEAR IRISH CREEK, VIRGINIA, H. G. Ferguson. *Virginia Geol. Survey, Bull.* **15,** 19 pp., 1918.

The existence of deposits of cassiterite in the Irish Creek district was known as early as 1846, but exploitation has been intermittent. The SnO_2-quartz veins are associated with a hypersthene granodiorite. The veins are not continuous and the tin content is very irregular, although some specimens of high grade ore were found.

W. F. H.

THE GROWTH PHENOMENA OF COPPER, SILVER, AND GOLD. A. Beutell. *Centr. Min. Geol.,* **1919,** 14–28.

Crystals of silver were produced when Ag_2S, Ag_2Te, or Ag_2Se were heated in contact with silver; copper crystals were formed by heating copper with its sulfide, selenide or telluride; and gold crystals when $AuTe_2$ or $AuSe_2$ were heated in contact with silver. E. F. H.

GLIDING IN JORDANITE. Margarete v. Goetze. *Centr. Min. Geol.,* **1919,** 65–74.

Jordanite, thru gliding on (101), may be either pseudo-orthorhombic or pseudo-hexagonal, while it is actually monoclinic. Natural and artificial gliding was investigated. E. F. H.

SCAPOLITE FROM THE GEM-BEARING PEGMATITES OF MADAGASCAR. A. Lacroix. *Compt. Rend.,* **169,** 261–264, 1919. Thru *Min. Abstr.,* **19,** 12, 1920.

Yellow scapolite of gem quality associated with beryl, euxenite, and monazite occurs in a pegmatite at Tsarasaotra, on the Tsibohaina River. H 6 ½. Uniaxial and negative. $\omega_{na}=1.5698$, $\epsilon_{na}=1.5490$. Partial analysis shows Cl 1.59, F 0.37, CO_2 2.52–2.71, SrO 0.09, FeO 0.90. $CaCO_3$ replaces CaO in the meionite molecule $3CaAl_2Si_2O_8.CaO$. Cut stones resemble beryl somewhat but may be distinguished by the strength of the double refraction and hardness.

W. F. H.

THE ARAGONITES OF SPAIN. Pedro Castro-Barea. *Trab. Mus. Nac. Cienc. Nat., geol.,* ser., **24,** 112 pp., 1919; thru *Rev. géol.* 1 (6), 223, 1920.

A monograph on the mineral aragonite, in which the Spanish localities are described in special detail. A new twinning law is described, and the presence of magnesium in some specimens noted. E. T. W.

VESUVIANITE IN ITS CHEMICAL RELATIONSHIPS. Gustav Tschermak. *Sitzb. Akad. Wiss. Wien,* M-n. Kl., I, **128,** No. 4, 25 pp., 1919.

Vesuvianite is found to be composed chiefly of a garnet molecule, $Ca_3Al_2Si_3O_{12}$, with minor amounts of $H_2R_3Si_2O_8$, $H_2R_2Al_2SiO_8$, $H_2R_3Si_4O_{12}$ and $H_2R_3SiO_6$. The tetragonal symmetry is believed to be connected with the presence of the garnet in groups of 4 molecules, while the partial monoclinic features the mineral shows are connected with the monoclinic arrangement of the atoms in the other molecules.

E. T. W.